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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,166	02/20/2004	Timothy A. Estes	31662-1001	7172
5179	7590	10/06/2006	EXAMINER	
PEACOCK MYERS, P.C. 201 THIRD STREET, N.W. SUITE 1340 ALBUQUERQUE, NM 87102			VERBITSKY, GAIL KAPLAN	
			ART UNIT	PAPER NUMBER
			2859	

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/783,166

Applicant(s)

ESTES ET AL.

Examiner

Gail Verbitsky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07/17/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 22-36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 22-36 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanners et al. (U.S. 6040691) [hereinafter Hanners] in view of Smith.

Hanners discloses in Figs. 2-3 a device/ thermal testing apparatus to test one or more samples (electronic components), the device comprising a single chamber 24, an opening (cylindrical support member) 56 in the middle of the chamber for introduction cool air (fluid) through the slots 116 and removing heated air (fluid) through the slots 118 and a pump 32 (col. 8, lines 1-11). The IC 75 and power conversion are acting a heater (col. 7, lines 64-67). As shown in Fig. 3, the air is affecting samples (comprising daughterboards 75) 50 symmetrically (evenly spaced) positioned on mounts (electrical connectors/ slots) 52 around the opening 56. It is inherent, that the cooling/ heating vary the temperature of the samples. Such positioning of the samples would imply that the samples to receive a uniform flow gradient of cool air from the slots 116 or alternately, from the opening 56, and there is no impediment (deflectors, etc.) of the flow between any two adjacent samples. The device comprises a host computer 26 and data acquisition including memory and a bus 16 (switching network communicating with the computer 26).

With respect to claims 2, 3: having temperature lower or higher than an ambient temperature, as stated in claims 2 and 3 respectively, absent any criticality, is only considered to be the "preferred" or "optimum" temperature that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the type of the samples, etc. See In re Boesch, 205 USPQ 215 (CCPA 1980).

With respect to claims 7-9: cooling to a temperature lower than a desired low temperature, and heating to a desired low temperature and heating to a desired high temperature, as stated in claims 7-9, absent any criticality, is only considered to be the "preferred" or "optimum" temperatures that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the type of the samples, etc. See In re Boesch, 205 USPQ 215 (CCPA 1980).

With respect to claims 5: the use of the particular kind of air, dried, as stated in claim 5, absent any criticality, is only considered to be the "optimum" cooling/ heating material/ / media/ fluid that a person having ordinary skill in the art at the time the invention was made using routine experimentation would have found obvious to provide for the probe element disclosed by Smith since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. In re Leshin, 125 USPQ 416.

Hanners does not explicitly teach the air is heated/ cooled and compressed.

Smith discloses in Figs. 1-3 an apparatus (thermal cyclor) in the field of applicant's endeavor comprising a central opening for admission of heated/ cooled pressurized (compressed) fluid (gas or air) 105 to a plurality of samples 101.

Therefore, it would have been obvious to one of ordinary skill at the time the invention was made to modify the device disclosed by Hanners, so as to provide not only the cooled air but also the heated air into the chamber, as taught by Smith, so as not only cool the samples but also to regulate the temperature in the chamber to a desirable, and thus, to expand the use of the device with different kinds of samples and thermal tests.

Therefore, it would have been obvious to one of ordinary skill at the time the invention was made to modify the device disclosed by Hanners, so as to provide admission of the compressed air to the samples, as taught by Smith, so as to enable the device to provide regulated heating/ cooling of the samples by compressing the air and thus, regulating the rate of the air flow.

3. Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanners and Smith, as applied to claims 1-16 above, and further in view of Birch et al. (U.S. 5701667) [hereinafter Birch].

Hanners and Smith disclose the device as stated above.

They do not explicitly teach the limitations of claims 20-22.

Birch discloses in Figs. 1-7 a device for testing of about six test coupons (samples) 74 comprising nets comprising daisy-chain (col. 8, lines 56-57) of vias 112. The device also comprises a data acquisition system. The device also comprises a

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heater (current) and fans 64 to cool the test coupon (cooling an air/ fluid around the test coupon) after heating by pulling air inside/ outside a cabinet (chamber) 44. The cooling/ blowing air can cool the test coupon to about (lower/ higher) an ambient temperature (col. 6, line 11). There is a switching network (controller) 60 multiplexing (switching) access of a microvoltmeter 52 so as to read a voltage drop across every coupon. The controller 60 also operates to control switching of the fans 64. The controller 60 is connected to a computer 26 and receives signals from the computer 26 via bus 42 (Fig. 4) also controlling the amount of heat (current) to the test coupons. Vias 115 serve as electrical conductive connectors for mounting the coupons to a board 127 (col. 9, line 67, col. 10, and line 1). Thus, sample mounts comprises electrical connectors.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Hanners and Smith, so as to use it for testing test coupons comprising daisy-chain of vias, as taught by Birch, because such a device also needs to be tested by heating and cooling, as already suggested by Birch, in order to provide the operator with accurately tested vias being able to correctly transmit right data.

4. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanners and Smith as applied to claims 1-16 above, and further in view of Blumenau (U.S. 5506510).

Hanners and Smith disclose the device as stated above.

They do not explicitly teach an ohmmeter with the remaining limitations of claims 17-19.

Blumenau discloses a device/ tester wherein; switching matrix connections (network) includes an ohmmeter to determine if there is a short circuit between connections.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device, disclosed by Hanners and Smith, so as to have an ohmmeter with a switching network, as taught by Blumenau, so as to test if there is a potential short circuit between connectors, and thus, to provide the operator with a correct testing data.

Response to Arguments

5. Applicant's arguments with respect to claims 1- 22 have been considered and they are persuasive. Therefore, the previous rejection is now withdrawn. However, the arguments are now moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gail Verbitsky whose telephone number is 571/ 272-2253. The examiner can normally be reached on 7:30 to 4:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571/ 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GKV

Gail Verbitsky 
Primary Patent Examiner, TC 2800

September 22, 2006